Notice of Allowability	Application No.	Applicant(s)	
	10/734,142	SEO ET AL.	
	Examiner	Art Unit	
	Andrae S. Allison	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *October 18, 2007*.

2. ☒ The allowed claim(s) is/are *1-7 and 10-11 now renumbered claims 1-9*.

3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☒ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Response to Remarks

1. The Office Action has been issued in response to amendment filed October 12, 2007. Claims 1-7 and 10-11 are pending.

Allowance

2. The following is an examiner's statement of reasons for allowance: The following is an examiner's statement of reasons for allowance: The most pertinent prior art is Joo et al (NPL document tilted: A New Robust Watermark Embedding into Wavelet DC components) and Yoshiura et al (US Patent No.: 6,959,101). Joo discloses a method of embedding a digital watermark on a wavelet lowest subband of an original image, the method comprising the steps of: wavelet transforming the original image into n levels; setting the wavelet lowest subband of the wavelet- transformed original image as a watermark embedment region; high-frequency filtering an original picture LLn of the watermark embedment region to generate a mirror picture LLn' from which a high frequency component of the original picture LLn has been eliminated; generating (i) index information designating a plurality of pixel positions within the watermark embedment region where on which the watermark is to be embedded and (ii) a sequence of watermark values to be embedded in said pixel positions, respectively; for each said pixel embedded position, selectively altering the original picture LL. coefficient

value based on (a) a corresponding mirror picture LLn' coefficient value, the watermark value to be embedded in said pixel position, and (c) embedment strength λ of said pixel position. However, Joo does not mention calculating an embedment strength λ for each said pixel position of the watermark embedment region, considering a variance degree of an original picture LLn coefficient value. Yoshiura disclose a digital watermark technique that includes the step of calculating an embedment strength λ for each said pixel position of the watermark embedment region, considering a variance degree of an original picture LLn coefficient value. Neither, Joo or Yoshiura, however, discloses selectively embedding the watermark at each said pixel position with the selectively altered original picture LLn coefficient value while skipping watermark embedment where the original picture LLn coefficient value before and after said altering differs by more than a predetermined value associated with the corresponding embedment strength λ. The examiner finds no reason or motivation to combine the above references in an obvious rejection thus placing the application in condition for allowance.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made part of the record and not relied upon is considered pertinent to applicant's disclosure.

Joo et al (US Patent No.: 6,934,403), Joo et al (US Patent No.: 7,302,078), Bolle et al (US Patent No.: 6,301,368), Zeng et al (US Patent No.: 6,792,129), and Sharma et al teach various watermarking method using dc wavelet components.

Inquires

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrae S. Allison whose telephone number is (571) 270-1052. The examiner can normally be reached on Monday-Friday, 8:00 am - 5:00 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Meta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Andrae Allison

December 4, 2007

A.A.